

CLAIMS

What is claimed is:

1. A radiographic imager having a measuring device for determining the distance between two selected points associated with the radiographic imager, comprising:

5 a radiated signal source positioned at a first point associated with said radiographic imager and operative to project a radiated signal;
a detector positioned at a second point associated with said radiographic imager and operative to detect said radiated signal; and
a circuit connected to said source and said detector, said circuit operative to determine the travel time of said radiated signal between said first point and said second point.

2. The device of claim 1, wherein
said radiated signal is projected from said source to said detector in a straight line, and
said distance between said two selected points is determined by multiplying the propagation speed of said radiated signal by said travel time of said radiated signal.

20 3. The device of claim 1, further comprising a surface associated with said radiographic imager, and wherein
said radiated signal is directed from said source to said surface;
said radiated signal is reflected from said surface to said detector; and

the distance between said surface and the closer of said source and said
detector is calculated as:

the propagation speed of said radiated signal multiplied by said travel time
of said radiated signal

5 less the distance from said source to said detector in the direction of said
surface.

4. The device of claim 1, wherein said radiated signal is selected from the group
including a laser beam, ultrasonic signal, magnetic field, and RF electromagnetic signal.

10 5. The device of claim 1, additionally comprising a display connected to said circuit,
said display operative to display said distance between said two selected points.

15 6. The device of claim 5, wherein said display is continuously updated as said
distance between said two selected points changes.

7. The device of claim 1, additionally comprising a power source connected to said
radiated signal source via a switch, whereby said radiated signal source is placed in an
operative state or an inoperative state responsive to said switch configuration.

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8. A method of determining the distance between two points associated with a
 5 radiographic imager, comprising:
 projecting a radiated signal from a first point associated with said radiographic
 imager;
 detecting the projected signal at a second point associated with said radiographic
 imager; and
 10 determining the distance between said first and second points based on the
 travel time of said radiated signal.

9. The method of claim 8, further comprising continuously displaying said distance
 to a radiologic technologist as said distance is changed by altering the relative position
 15 of a radiation beam source and an image receptor.

10. A radiographic imager, comprising:
 a collimator housing containing a radiation beam source;
 an image receptor for receiving radiation and responsively forming a diagnostic
 20 image; and
 a measuring device operative to determine the distance between said collimator
 housing and said image receptor by calculating the travel time of a
 radiated signal directed from a radiated signal source to a detector, said

radiated signal source affixed to said collimator housing and said detector positioned in a known spatial relationship with said source and said image receptor.

5 11. The radiographic imager of claim 10, further comprising a switch for toggling said radiated signal source between an operative and an inoperative condition.

10 12. The radiographic imager of claim 10 wherein said measuring device comprises a radiated signal source for emitting a radiated signal and a detector spaced from said radiated signal source and operative to detect the radiated signal emitted by the radiated signal source.

15 13. The radiographic imager of claim 12 including a circuit operatively associated with said radiated signal source and said detector for the determining the distance between said radiation beam source and said image receptor.

14. The radiographic imager of claim 13 wherein said circuit is operative to determine the travel time of a radiated signal passing from the radiated signal source to the detector.

20 15. The radiographic imager of claim 10 wherein said radiated signal source is selected from the group including a laser beam source, an ultrasonic signal source, a magnetic field source, and an RF electromagnetic signal source.

16. The radiographic imager of claim 10 including a display that is operative to display the distance between said radiation beam source and said imager receptor.

5 17. A radiographic imager, comprising:
an image receptor;
an x-ray source spaced from said image receptor; and
a radiated signal source for determining the distance between said image
receptor and said x-ray source.

10 18. The radiographic imager of claim 17 wherein said radiated signal source is
operative to direct a radiated signal to a detector associated with said radiographic
imager and wherein the distance between said x-ray source and said image receptor is
a function of the travel time of the radiated signal to move between the radiated signal
15 source and the detector.

20 19. The radiographic imager of claim 17 wherein said radiated signal source is taken
from the group including a laser beam source, an ultrasonic signal source, a magnetic
field source, and an RF electromagnetic signal source.

20. The radiographic imager of claim 17 further including a controller operatively
associated with the radiated signal source and the detector for the determining the

distance between the x-ray source and the image receptor based on the travel time of the radiated signal in moving from the radiated signal source to the detector.

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